APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,376	09/18/2003	Steven Fluxman	61170-00018USPX	5019

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EXAMINER
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ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Offic Action Summary	10/665,376	FLUXMAN ET AL.
	Examiner	Art Unit	
	Lana N. Le	2618	

-- Th MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *9/18/06*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-27* is/are pending in the application.
  4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) *1-18 and 27* is/are allowed.
6) ☒ Claim(s) *19,25 and 26* is/are rejected.
7) ☒ Claim(s) *20-24* is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
  Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  a) ☒ All   b) ☐ Some * c) ☐ None of:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____.
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
  * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ylitalo et al (US 6,215,814) in view of Braam et al (US 7,031,737).

Regarding claim 19, Ylitalo et al disclose a method of processing an incident

signal within a "RAKE" receiver having several fingers (270A.....270N), comprising:

receiving the incident signal formed of symbols output from at least one multi-path

transmission channel (multipath propagated signal components) for which each path

transports a delayed version of the signal (via delay estimator 260); detecting paths for

allocation to at least some of the fingers (col 8, lines 13-16); and

combining (via 280A, 280B) the information output from each finger (270A,

270B.....,270N) assigned to a path (col 9, lines 10-21, lines 43-50). Ylitalo et al do not

disclose combining within a memory sized to be capable of storing a number of symbols

larger than the maximum delay between the paths, the combining including addressing

locations in the memory using address pointers associated with the corresponding

fingers. Braam et al disclose combining within a memory sized to be capable of storing

a number of symbols larger than the maximum delay between the paths, the combining

including addressing locations in the memory using address pointers associated with

the corresponding fingers (col 9, lines 10-21; lines 47-50). It would have been obvious

to one of ordinary skill in the art at the time the invention was made to have a memory

means to store received chips for combining and to add a value from a free running

address counter to at least one rake finger dependent offset by using a memory

address.

Regarding claim 26, Ylitalo et al and Braam et al disclose the method of claim 19,

where Braam et al disclose a mobile telephone device including the RAKE receiver

performing the method (col 5, lines 60-65).

3. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ylitalo et al

(US 6,215,814) in view of Braam et al (US 7,031,737) and Li et al (US 2003/0,202,565).

Regarding claim 25, Ylitalo et al and Braam et al disclose the method of claim 19,

wherein Ylitalo et al and Braam et al do not disclose an integrated circuit including the

RAKE receiver. Li et al disclose an integrated circuit including the RAKE receiver (para.

11). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have the RAKE receiver be in an integrated circuit in order to

reduce the size of the rake receiver to be small enough to fit within an integrated circuit

as taught by Li et al.

Allowable Subject Matter

4. Claims 20-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 20, Ylitalo et al and Braam et al disclose the method of claim 19 wherein Ylitalo et al, Braam et al and the cited prior art do not disclose combining includes a steady state phase of: using the address pointers to point to locations with mutual spacings taking account of mutual delays between the paths; storing a current symbol received on a first finger in the memory at the write address location denoted by the corresponding address pointer; and incrementing this address pointer.

Regarding claim 23, Ylitalo et al and Braam et al disclose the method of claim 19 wherein Ylitalo et al, Braam et al, and the cited prior art fail to disclose the combining includes a steady state phase of using the address pointers to point to locations with mutual spacings taking account of mutual delays between the paths; storing a current symbol received on a first finger in the memory at the write address location denoted by the corresponding address pointer; and incrementing this address pointer.

Regarding claim 24, Ylitalo et al and Braam et al disclose the method of claim 19 wherein Ylitalo et al, Braam et al, and the cited prior art fail to disclose the combining includes a transient phase of setting initial locations for the address pointers to be equal to a same initial value; outputting symbols from the different fingers progressively and at corresponding different instants; storing a current symbol received on a finger in the

memory at the write address location denoted by the corresponding address pointer; and incrementing this address pointer.

5. Claims 1-18 and 27 are allowable over the cited prior art.

6. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 1, Ylitalo et al disclose processing an incident signal within a RAKE receiver (Rake finger) with several fingers (270A, 270B,...270N); comprising:

receiving the incident signal formed of symbols output from at least one multi-path transmission channel (multipath propagated signal components) for which each path transports a delayed version of the signal (via delay estimator 260); detecting paths for allocation to at least some of the fingers (col 8, lines 13-16); and

combining (via 280A, 280B) the information output from each finger (270A, 270B.....,270N) assigned to a path (col 9, lines 10-14, lines 43-50). Braam et al disclose a memory having a plurality of addressable locations storing a number of symbols larger than the maximum delay between the paths; a plurality of address pointers associated with corresponding ones of the plurality of fingers, the address pointers being set to initial locations in the memory which take in account differences in a number of symbols between paths of the incident signal (col 9, lines 10-21; lines 47-50).

However, Ylitalo et al, Braam et al, and the cited prior art fail to disclose: pointing address pointers in a steady state phase to addresses with mutual spacings taking account of mutual delays in the number of symbols between the paths; storing a current

symbol received on the first finger in the memory at the write address denoted by its corresponding address pointer; incrementing the address pointer; and before reception of the next symbol on this first finger, extracting the contents of the memory stored at the read addresses denoted by all the other address pointers in sequence, summing these contents in sequence with the symbols present on the other fingers, then storing these sums, except for the sum corresponding to the last finger, at the same read addresses before incrementing all the other pointers, and delivering the last sum corresponding to the last finger at the output from the receiver.

Regarding independent claim 8, Ylitalo et al disclose a "RAKE" receiver, comprising:

a signal input to receive an incident signal formed from symbols output from at least one multi-path transmission channel (multipath propagated signal components) in which each path transports a delayed version of the signal; several fingers (270A.....270N), each intended to demodulate a given path at a given instant; a control unit designed to detect and allocate paths to at least some of the fingers (col 8, lines 13-16); and a combination unit (280A, 280B) connected to the output from the fingers (270A....270N) and designed to sum the information produced at the output from each finger (col 9, lines 10-14, lines 43-50).

Braam et al disclose a memory capable of storing a number of symbols corresponding to the maximum delay between the paths; address pointers associated with each corresponding finger (col 9, lines 10-21, lines 47-50).

However, Ylitalo et al, Braam et al, and the cited prior art fail to disclose:

processing means with a steady state phase during which the address pointers

point to addresses with mutual spacings taking account of the mutual delays between

the paths, and being capable of receiving a current symbol on a first finger during this

steady state phase, storing it in the said memory at the write address given by the

corresponding address pointer, and then incrementing the address pointer, and

before reception of the next symbol on this first finger, being capable of reading

the contents of the memory stored at the read addresses denoted by the other address

pointers, in sequence, summing these contents with the corresponding symbols present

on the other fingers, and then storing these sums, except for the sum corresponding to

the last finger, at the same read addresses before incrementing the pointers, the last

sum corresponding to the last finger being delivered at the output from the combination

unit.

Regarding independent claim 27, Ylitalo et al disclose a RAKE receiver (Rake

finger) that receives an incident signal having a plurality of paths (multi-paths),

comprising:

a plurality of fingers (270A, 270B,...270N);

Braam et al disclose a memory having a plurality of addressable locations storing a

number of symbols larger than the maximum delay between the paths (col 9, lines 10-

15; lines 47-50).

However, Ylitalo et al, Braam et al, and the cited prior art fail to disclose:

a plurality of address pointers associated with corresponding ones of the plurality

of fingers, the address pointers being set to initial locations in the memory which take in

account differences in a number of symbols between paths of the incident signal;

a data handling functionality that causes a current symbol received on a given

finger to be stored in the memory at a write location given by its corresponding address

pointer; and

a summation functionality that causes the contents of the memory stored at read

locations given by all the address pointers corresponding to other fingers to be

extracted in sequence and summed, where each sequential sum, except for the a last

sequential sum corresponding to a last finger being stored at the same read locations,

and wherein the last sequential sum corresponding to the last finger being delivered as

output from the receiver.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Lana N. Le whose telephone number is (571) 272-7891.

The examiner can normally be reached on M-F 9:30-18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Edward F. Urban can be reached on (571) 272-7899. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Lana Le

5-29-06

LANA LE
PRIMARY EXAMINER